

Claims

Cancel claims 1 through 20 and substitute new claims 21 through 57 as follows:

Claims: What is claimed:

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21. A method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present comprising the steps of,
providing a vehicular headlight system adapted to provide at least two distinct illumination intensities in each of a plurality of individually controlled illumination sectors,
providing a vehicle sensing means for sensing other vehicles,
providing a controller which uses input from said sensing means to control individual elements within said vehicular headlight system,
whereby said controller causes said vehicular headlight system to provide a lower intensity illumination to sectors where a vehicle's presence is sensed and concurrently to provide a higher intensity illumination to sectors where no vehicle's presence is sensed.
22. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein each illumination sector is a fraction of both the horizontal and the vertical cross section of the total illumination distribution provided by said vehicular headlight system when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.
23. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein a first illumination sector overlaps with at least some portion of a second illumination sector.
24. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said vehicle sensing means senses electromagnetic radiation emitted by at least one other vehicle.
25. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said sensing means converts electromagnetic radiation to an electric signal.
26. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein at least one of the said individually controlled elements within said vehicular

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headlight system comprises at least one element selected from the group consisting of; illumination emitting source, light emitting diode, diode, illumination filter, electro-chromatic filter, polymer dispersed liquid crystal, illumination deflector, variable refractor, afocal illumination input, diverging illumination output, variable prism, lens, and liquid crystal

27. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein a plurality of independently controlled illumination sectors corresponds with the area of lower intensity illumination provided for one vehicle.

28. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein a plurality of illumination sectors corresponding to a plurality of sensed vehicles can be illuminated at said lower illumination intensity while concurrently a plurality of illumination sectors corresponding to a plurality of sectors with no sensed vehicles can be illuminated at said higher illumination intensity.

29. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein the lower intensity illumination sectors provided for one vehicle is at least sixty percent surrounded by sectors of said higher illumination intensity when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.

30. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination emitting elements each of said elements being individually controllable with regard to which of at least two illumination intensities are emitted there from.

31. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination filter elements, each of said elements being individually controllable with regard to controlling which of at least two intensities of illumination is permitted to pass there through.

32. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination directing elements, each of said elements being individually

controllable with regard to the selection of which of at least two output directions of illumination will be emitted respectively therefrom..

33. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said controller comprises at least one element selected from the group consisting of; illumination control software, illumination control logic, illumination control circuit, threshold filter, proximity estimator, memory, processor, switch array, manual bypass, iterative process, and serial sensor input.

34. A vehicle headlight illumination system comprising,
a means for sensing the location of at least one other vehicle,
a means for diminishing the amount of illumination directed to said at least one other vehicle, wherein the diminished illumination of said vehicle headlight illumination system is at least sixty percent surrounded by higher intensity illumination, when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.

35. The vehicle headlight illumination system of claim 34 wherein the distribution pattern of said diminished illumination is a fraction of both the horizontal and the vertical cross section of the total illumination distribution provided by said vehicular headlight system.

36. The vehicle headlight illumination system of claim 34 wherein the vehicle location sensing means senses electromagnetic radiation emitted by said at least one other vehicle.

37. The vehicle headlight illumination system of claim 34 wherein said vehicle location sensing means converts electromagnetic radiation to an electric signal.

38. The vehicle headlight illumination system of claim 34 wherein said means for diminishing comprises the control of at least one element selected from the group consisting of; illumination emitting source, light emitting diode, diode, illumination filter, electro-chromatic filter, polymer dispersed liquid crystal, illumination deflector, variable refractor, afocal illumination input, diverging illumination output, variable prism, lens, and liquid crystal.

39. The vehicle headlight illumination system of claim 34 wherein said means for diminishing the illumination directed to a single vehicle comprises at least two independently controlled elements, selected from the group consisting of; illumination emitting source, light emitting diode, diode, illumination filter, electro-chromatic filter, polymer dispersed liquid crystal, illumination deflector, variable refractor, afocal illumination input, diverging illumination output, variable prism, lens, and liquid crystal.

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40. The vehicle headlight illumination system of claim 34 wherein a plurality of illumination sectors corresponding to a plurality of sensed vehicles can be illuminated at said lower illumination intensity while concurrently a plurality of illumination sectors corresponding to a plurality of sectors with no sensed vehicles can be illuminated at said higher illumination intensity.

41. The vehicle headlight illumination system of claim 34 wherein said vehicle headlight illumination system comprises at least one headlight which contains at least two illumination emitting elements each of said elements being individually controllable with regard to which of at least two illumination intensities are emitted there from.

42. The vehicle headlight illumination system of claim 34 wherein said vehicle headlight system comprises at least one headlight which contains at least two illumination filter elements, each of said elements being individually controllable with regard to controlling which of at least two intensities of illumination is permitted to pass there through.

43. The vehicle headlight illumination system of claim 34 wherein said vehicle headlight system comprises at least one headlight which contains at least two illumination directing elements, each of said elements being individually controllable with regard to the selection of which of at least two output directions of illumination will be emitted respectively therefrom..

44. The vehicle headlight illumination system of claim 34 wherein said means for diminishing comprises at least one element selected from the group consisting of; illumination control software, illumination control logic, illumination control circuit, threshold filter, proximity estimator, memory, processor, switch array, manual bypass, iterative process, and serial sensor input.

45. A vehicular headlight system comprising,
a sensor for sensing other vehicles,
a vehicular headlight system adapted to provide variable illumination in a plurality of individually controlled illumination sectors,
a variable illumination controller,
whereby said controller receives input from said sensor and causes said headlight system to diminish the amount of light directed toward sectors containing vehicles while concurrently not diminishing the amount of light directed toward sectors not containing vehicles.

46. The vehicular headlight system of claim 45 wherein each illumination sector is a fraction of both the horizontal and the vertical cross section of the total illumination distribution provided by said vehicular headlight system when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.

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47. The vehicular headlight system of claim 45 wherein a first illumination sector overlaps with at least some portion of a second illumination sector.

48. The vehicular headlight system of claim 45 wherein said vehicle sensor senses electromagnetic radiation emitted by at least one other vehicle.

49. The vehicular headlight system of claim 45 wherein said sensor converts electromagnetic radiation to an electric signal.

50. The vehicular headlight system of claim 45 wherein at least one of the said individually controlled elements within said vehicular headlight system comprises at least one element selected from the group consisting of; illumination emitting source, light emitting diode, diode, illumination filter, electro-chromatic filter, polymer dispersed liquid crystal, illumination deflector, variable refractor, afocal illumination input, diverging illumination output, variable prism, lens, and liquid crystal

51. The vehicular headlight system of claim 45 wherein a plurality of independently controlled illumination sectors corresponds with the area of lower intensity illumination provided for one vehicle.

52. The vehicular headlight system of claim 45 wherein a plurality of illumination sectors corresponding to a plurality of sensed vehicles can be illuminated at said lower illumination intensity while concurrently a plurality of illumination sectors corresponding to a plurality of sectors with no sensed vehicles can be illuminated at said higher illumination intensity.

53. The vehicular headlight system of claim 45 wherein the lower intensity illumination sectors provided for one vehicle is at least sixty percent surrounded by sectors of said higher illumination intensity when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.

54. The vehicular headlight system of claim 45 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination emitting elements each of said elements being individually controllable with regard to which of at least two illumination intensities are emitted there from.

55. The vehicular headlight system of claim 45 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination filter elements, each of said elements being individually controllable with regard to controlling which of at least two intensities of illumination is permitted to pass there through.